THE DINI GROUP

LOGIC Emulation Source

User Manual
DNJTAG_USB

LOGIC EMULATION SOURCE

DNJTAG_USB User Manual Version 1.0

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Chapter 1

Introduction

This User Manual accompanies the DNJTAG_USB.

1 General Description

This DNJTAG_USB lets the user daisy chain up to 4 Xilinx JTAG devices and can communicate with these devices from outside a chassis via a USB-A to MICRO USB-B cable. The PCI Express fingers only provide power to the DNJTAG_USB so it can be plugged into any width PCI Express slot and no external power is needed.

2 Features

Figure 1 – DNJTAG_USB

DNJTAG_USB Board features the following:

- USB to JTAG converter (U3)
- 4 Xilinx JTAG 14-pin headers (J1, J2, J3, J4)
- LED Indicators
    - Power to the board (DS1)
    - Power from the JTAG cable (DS2)
- Clock Buffer (U4)
- Automatic bypass of unused JTAG connecters (U2, U5, U6)
- Two separate powering options (one or the other):
    - PCI Express fingers
    - External power connector (J5) for use without PCI Express power
- 12V, 25W power output (J6) – do not use without consulting The Dini Group first.
- Stiffener Bar
- Mounting holes for various mounting options
    - External chassis
    - PCI Bracket (standard/low profile)

3 Package Contents:

Before using this board, be sure to inspect the board to verify that you received the correct item. If any of these items are missing, contact The Dini Group before you proceed. The DNJTAG_USB board kit includes the following:

- DNJTAG_USB
- Standard profile PCI bracket (attached to DNJTAG_USB)
- Stiffener (attached to DNJTAG_USB)

- Low profile PCI bracket
- USB-A to MICRO USB-B cable (2m)
- 14-pin Xilinx JTAG cable, F/F
- PCI Express power output cable, F/F (do not use without consulting The Dini Group first)
- CD ROM containing:
    - User Manual (pdf format)
    - Schematic (pdf format)
    - Component Datasheets (pdf format)

4 Inspect the Board

Place the board on an anti-static surface and inspect it to ensure that it has not been damaged during shipment. Verify that all components are on the board and appear intact.

5 Additional Information

For additional information, please visit http://www.dinigroup.com/. The following table lists some of the resources you can access from this website. You can also directly access these resources using the provided URLs.

Resource	Description/URL
User Manual	This is the main source of technical information. The manual should contain most of the answers to your questions
Dini Group Web Site	The web page will contain the latest user manual, application notes, FAQ, articles, and any device errata and manual addenda. Please visit and bookmark: http://www.dinigroup.com
E-Mail	You may direct questions and feedback to the Dini Group using this e-mail address: support@dinigroup.com
Phone Support	Call us at **858.454.3419** during the hours of 8:00am to 5:00pm Pacific Time.
FAQ	The download section of the web page may contain a document called **DNJTAG_USB Frequently Asked Questions (FAQ)**.

Resource	Description/URL
	This document is periodically updated with information that may not be in the User Manual.

Chapter 2

Getting Started

Congratulations on your purchase of the DNJTAG_USB. The remainder of this chapter describes how to start using the DNJTAG_USB.

1 Before You Begin

1.1 Warnings

- **ESD Warning** - The board is sensitive to static electricity, so treat the PCB accordingly. The target markets for this product are engineers that are familiar with FPGAs and circuit boards. However, if needed, the following web page has an excellent tutorial on the "Fundamentals of ESD" for those of you who are new to ESD sensitive products:

  http://www.esda.org/basics/part1.cfm

- **Operating Temperature** - Avoid touching the power supplies as these parts operate at high temperatures and may cause skin burns.

2 Board Setup

The instructions in this section explain how to install the DNJTAG_USB.

2.1 Before Powering Up the Board

Before powering up the board, prepare the board with one of the two options described below:

Option 1: For use in a chassis, plug in board to any PCI Express slot

Option 2: For use outside a chassis, remove PCI bracket and plug in J5.

2.2 Powering Up the Board

The DNJTAG_USB is powered by the PCI Express connector, or the floppy drive connector (J5).

Turn on ATX power supply

3 Installing the Software

3.1 Installing USB to JTAG Converter Software (Windows 7)

After board is powered on, plug in 'USB-A to MICRO USB-B cable' from your computer to the DNJTAG_USB. Windows update should install the needed driver automatically.

The DNJTAG_USB is now ready to be used with the Xilinx tools.

Chapter 3

Hardware Description

This chapter describes the hardware features of the DNJTAG_USB

1 Overview

A high level block diagram of the DNJTAG_USB is shown in Figure 2.

```
Requirements:
1. Must have Xilinx JTAG1(J1) or Altera JTAG(J10) connected in order to use the others.
2. Can not use both J1 and J10 at the same time.
3. All VREF have to to be the same.
```

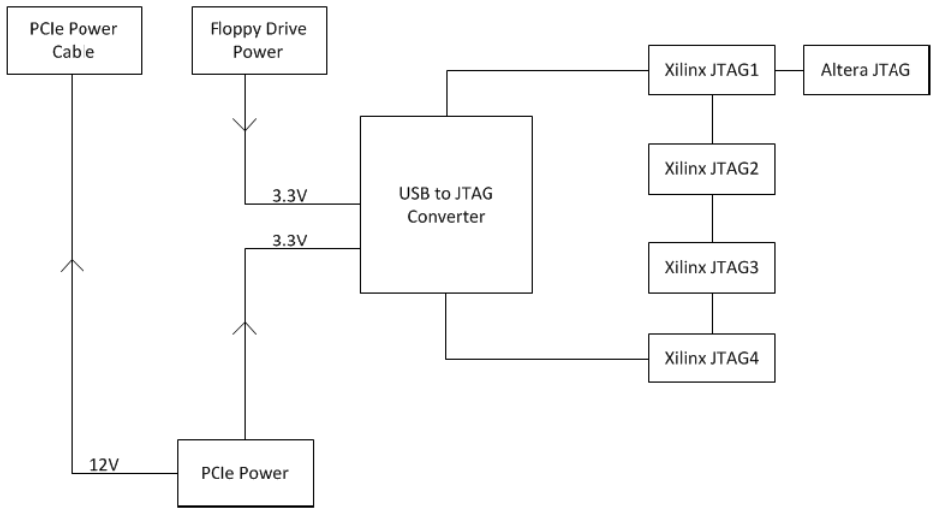

Figure 2 – DNJTAG_USB Block Diagram

Power can be sourced from PCI Express slot or floppy drive power. USB cable is used to interface to 1 to 4 Xilinx JTAG devices. LEDs are used to indicate power supply presence. PCI Express 12V, 25W power output (do not use without consulting The Dini Group first).

2 Special Requirements

2.1 Requirements

Most of these requirements that are indicated on the back of the DNJTAG_USB

1. Must have Xilinx JTAG (J1) or Altera JTAG (J10) connected in order to use the others.
2. Cannot use both J1 and J10 at the same time.
3. All VREF have to be the same.
4. +VREF from Xilinx JTAG voltage range is 1.65V – 5.5V

2.2 Additional Notes

Most of these notes are indicated on the back of the DNJTAG_USB

1. J5 is for non-PCIe usage
2. J6 25W power output should only be used after consulting The Dini Group.

3 LED Indicators

3.1 Power Supply LEDs

Two green LEDs are provided to indicate the presence of +3.3V and +VREF.

Table 1 – Power Supply LEDs

Signal Name	LED
+3.3V	DS1
+VREF	DS2

4 Mechanical

4.1 Custom Form Factor

The DNJTAG board will fill in the slot next to any single slot board, but was specifically designed to fit in the slot next to the following Dini Group boards:

DNBFC_S12_PCIE

DNK7F5_PCIE

DNPCIE_10G_HXT_LL

Contact support@dinigroup.com for more information about mechanical compatibility.